

DETECTING CURRENTS IN A SWITCHING REGULATOR

Abstract of the Disclosure

5 A switching regulator provides energy to an inductor –capacitor
combination that supply a DC voltage as an output. The presence of a current
that can be significantly lower than the typical load current is detected using a
pulse signal that provides a measure of the current supplied by the regulator to
the inductor. A comparator compares this signal to a reference voltage that is
10 related to the current level to be detected. This reference voltage is adjustable
based on the voltage applied by the regulator and the voltage being ultimately
supplied as the DC output voltage. The comparator and a capacitor perform an
integration function that results in a voltage that ramps upward if the current
threshold is being exceeded. When this ramping voltage passes a
15 predetermined level, a signal is provided to indicate that the threshold has been
exceeded.